Performance and Adoptability Biodegradable Mulch

biodegradablemulch.org

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Summary:

The Omache Farm operators preferred PE mulch over paper, and BDMs over PE. Reasons included weed control, labor, and plant growth.



Jason demonstrates the laying of paper and biodegradable plastic mulches at Omache Farm.

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On-Farm Biodegradable Mulch Case Study: Omache Farm – Washington State

Farm Profile

Omache Farm, located in the Palouse region of southeastern Washington State, is a 30-acre family farm focused on diverse vegetable production and animal husbandry. It is owned and operated by Jason and Margaret Parsley. Their production follows



Vegetable starts in a truck bed at Omache Farm. They will be planted into beds with polyethylene, biodegradable plastic, and paper mulches.

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organic, natural, and sustainable practices, and they are pursuing certification as Certified Naturally Grown (CNG). They sell most of their produce at local farmers' markets and through a Community Supported Agriculture (CSA) program. Prior to this trial they had never used polyethylene (PE) plastic mulch or biodegradable plastic mulch (BDM), but did have experience with paper mulch and landscape fabric.

On-Farm Activities

From Spring 2016 to Fall 2016, three black BDMs (BioAgri from *Biobag Americas*, Organix A.G. Film from *Organix Solutions*, and Experimental PLA/PHA) were trialed on winter squash. Each product was used on one 200-foot row. Organix A.G. Film was also trialed on extra rows of sweet peppers and brassicas. Additionally, PE mulch (from *FilmTech Corp*) and paper mulch (WeedGuardPlus from *Sunshine Paper Co.*) were trialed on one 200-foot row of winter squash each.

An experiential field day was held for community members to view and participate in laying the mulches (5/12/16). Jason and Margaret were interviewed about the trial three times—in January 2016 before the beginning of the trial, June 2016 in the middle of the trial, and June 2018 (a year and a half after the end of the trial).







Farmer Perceptions

Before the trial began, Jason and Margaret expressed interest in BDMs as an alternative to paper mulch. They had used paper mulch in the past, and although pleased with its biodegradability, they had issues with its fragility. Wind and water caused the paper mulch to rip, which allowed weeds to grow through it. They viewed BDMs as a more durable alternative to paper mulch.

As with the paper mulch, Jason and Margaret were interested in BDMs for weed control and associated labor savings. Because they do not use chemical weed control, weed removal constitutes a large labor drain on their farm. Using mulch presented an opportunity to reduce this burden. Additionally, using biodegradable mulch eliminated the need to expend labor removing the mulch at the end of the season, as they would have had to do with PE plastic mulch. They also considered BDMs a more environmentally friendly alternative to PE mulch.

While optimistic about the potential of BDMs, Jason and Margaret expressed some concerns as well. In particular, they were worried that BDMs look like PE plastic (black and shiny). They themselves did not mind this resemblance, but were concerned that their landlord and their customers, who are often on the farm, would have issues with the appearance. In particular, Margaret had to think carefully about how she communicated with customers who asked about the BDMs. She assumed some customers would hear the word 'plastic' and immediately have negative connotations regardless of its biodegradability.

Looking to the Future

Throughout the trial, Jason and Margaret found plastic mulches (PE and BDMs) preferable to paper mulch. Compared to paper mulch, they agreed PE mulch and all three types of BDMs had superior water retention, weed control, and crop growth. For these reasons, they made the decision to start using plastic mulches on their farming operation. While they preferred BDMs over PE mulch because of the lower labor

requirement, the Omache Farm operators decided to use PE mulch (after the trial) because it is approved for use on CNG farms, a certification they continue to pursue. More recently, Jason learned that some BDMs had been approved for use on CNG farms. In light of this new information, he plans to replace PE mulch with Bio360 brand BDM (from *Dubois Agrinovation*). Specifically, he plans to use a white-on-black biodegradable plastic mulch on pumpkins and some brassicas. He is especially interested in the potential labor savings (and cost savings) associated with BDMs versus PE mulch, and suggested that other farmers in the area would be as well.



Above: A field day participant helps lay a row of biodegradable plastic mulch film.



Above: Jason describes his experience laying and planting into the different types of mulch.



Above: Field day attendees ask questions and learn about the different types of mulches used in the trial.